

NASA Earth Science Data for Wildland Fire Decision Making

NASA ARSET Training

Opportunities to Apply Remote Sensing in Boreal/Arctic Wildfire Management and Science

Fairbanks, AK

Monday, April 3, 2017

Training Agenda

Course Description: This introductory in-person training will provide lectures and hands-on exercises focused on the use of NASA Earth observations for operational wildland fire activities. This training is provided in conjunction with the Opportunities to Apply Remote Sensing in Boreal/Arctic Wildfire Management and Science Workshop coordinated by the Alaska Fire Science Consortium (AFSC) and will focus on the major topics of interest of the workshop: 1) potential fire risk, 2) near real-time fire behavior, and 3) post-fire effects. Participants will be expected to complete multiple exercises reviewing the use of remotely sensed data such as Landsat, MODIS, GOES, and SMAP and online tools such as Worldview and the Fire Information and Resources Management System (FIRMS). Course instructors from the NASA's ARSET's program and the Short-term Prediction Research and Training Center (SPoRT) will be actively engaged in guiding participants through exercises and will provide in-class feedback.

Learning Objectives:

- Become familiar with the resources available for satellite remote sensing of wildfires
- Understand how to utilize online webtools for near-real time (NRT) fire identification
- Explore satellite datasets available for assessing pre-fire conditions
- Discover new open-source geospatial tools available for post-fire impact assessment

Intended Audience: Local, regional, state, federal, and international organizations interested in assessing wildland fire activity using satellite imagery. Professional organizations in the public and private sectors engaged in environmental management and monitoring will be given preference over organizations focused primarily on research.

Prerequisites:

- Complete the on-demand "Fundamentals of Remote Sensing" webinars, Sessions 1 and 2 (<http://arset.gsfc.nasa.gov/webinars/fundamentals-remote-sensing>) or equivalent experience.

Agenda
8:30am-5:00pm

8:30 AM: Introduction

- (8:30 - 8:45) Introduction and Logistics (Cindy Schmidt, Amber McCullum)
- (8:45 - 9:00) ARSET Program Overview (Cindy Schmidt)
- (9:00 - 9:30) Wildfire Satellites and Products (Amber McCullum)
- (9:30 - 10:00) Currently Funded Applied Science Projects (Vince Ambrosia)

10:00 - 10:15 Break

10:15 AM: Near real-time tools

- 10:15 - 10:35 NRT tools Overview (Wilfrid Schroeder)
- 10:35 - 11:00 VIIRS and MODIS Fires and Thermal Anomalies online data visualizations and handling (exercise)
- 11:00 - 12:00 SPoRT (Anita Leroy, lecture and exercise)

12:00 - 1:00 Lunch Break

1:00 Potential Fire Risk

- 1:00 - 1:15 Overview of snow products (Tom Maiersperger)
- 1:15 - 1:45 Accessing MODIS Snow Cover from AppEEARS (exercise)
- 1:45 - 2:00 Overview of soil moisture product (SMAP - Mary Ellen Miller)
- 2:00 - 2:30 Downloading and viewing SMAP data (exercise)

3:00 - 3:15 Break

3:15 Post-Fire Restoration

- 3:15 - 4:15 Burn severity and erosion and runoff prediction (Mary Ellen Miller)
 - Lecture and demo of QWEPP
- 4:15 - 4:30 Burned area products (demo)
 - Steve Howard/Josh Picotte QGIS tool

4:30 - 5:00 Wrap up and Evaluation